

In re Patent Application of  
**COPE**  
Serial No. 10/562,044  
Filed: JANUARY 25, 2007

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#### AMENDMENTS TO THE CLAIMS

Please replace all previous versions of the claims with the following listing:

1. (Previously Presented) A method of translating a first schema of data having one structure or semantics into a second schema of data having a second structure or semantics, the method comprising:

    using an ontology deconstruction and reconstruction transfer mechanism which creates an interlanguage\_document type definition (DTD) in which the interlanguage DTD manages the structure and semantics of the structure and semantics of data to allow an interlanguage definition of the first schema and translation into the second schema by the transfer mechanism;

    wherein use of the deconstruction and reconstruction transfer mechanism includes:

        machine-reading tags;

        interpreting the data format which has been marked up by these tags and detecting its inherent structures or semantics to be included in the interlanguage DTD; and

        using the interlanguage DTD to transfer the data of the first schema into the second schema;

    wherein the transfer mechanism includes a superordination mechanism and a composition mechanism; and

        wherein within the superordination mechanism there are the submechanisms of hyponymy, hyperonymy, co-hyperonomy, antonymy and series.

2-5. (Cancelled)

6. (Presently Presented) The method according to claim 1, wherein within the composition mechanism, there are any one or more of the submechanisms of meronymy, co-meronymy, consistency and collectivity.

7. (Previously Presented) The method according to claim 1, wherein data is imported, and in which supplementary tag-by-tag or field-by-field relationships are generated using one or more of the filter mechanisms of:

taxonomic distance for determining whether the relationships of composition and superordination are too distant to be necessarily valid,

levels of delicacy for determining whether an aggregated data element needs to be disaggregated and re-tagged,

potential semantic incursion for determining identifiable sites of ambiguity, and  
translation of silent into active tags or vice versa for determining the level in the hierarchy of composition or superordination at which data needs to be entered to effect superordinate transformations.

8. (Previously Presented) The method according to claim 7, wherein a thesaurus and dictionary are created in combination with a taxonomy definition in which the dictionary unpacks the meaning by means of paraphrase and exemplars and the thesaurus display wordings through which meanings can be aptly expressed.

9. (Previously Presented) The method according to claim 8, further comprising mapping a layer of the thesaurus into a paradigm-constituting taxonomy for each schema in a related technology to thereby provide a basis of transfer of data to any other mapped schema in the related technology.

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10. (Previously Presented) The method according to claim 9, wherein the thesaurus takes each schema as its starting point, lists its tags and reproduces the definitions and examples as given by each schema and against each tag, a direct synonym is provided, whose semantics are coextensive with, or narrower than, the tag against which the mapping occurs to provide a single equivalent for each mapped tag.

11. (Previously Presented) The method according to claim 8 in which the dictionary is constructed using five semantic rules:

- minimized ambiguity;
- functional clarity;
- lowest common denominator semantics;
- [[the]]distinction of silent from active tag-concepts; and
- comprehensive internal cross-reference.

12. (Previously Presented) A method of interpellating source data into an interlanguage DTD format for use in transferring data marked up in a first schema of data having one structure or semantics into a second schema of data having a second structure or semantics, the method comprising:

- providing a quantum of source data of said first schema to a processing and storing apparatus;

- machine-reading the said source data into a DTD according to a schematic structure of a particular source ontology;

- automatically reading the structure and semantics ontology immanent in the source data by interpreting this both from the DTD and the way the DTD is realised in that particular instance;

- applying a plurality of filters including a delicacy filter, a synonomy filter, a contiguity filter and a subset filter;

determining from the DTD and its particular instantiation an inherent taxonomic or schematic structure forming the interlanguage DTD comprising of relationships of tags that are unambiguous based on the readable structure of the DTD and evidence drawn from its instantiation in the source data.

13. (Previously Presented) The method according to claim 12, further comprising:

providing a structured query for assessment of ambiguous relationships of tags and receiving an assessed response to the structured query to add to the interlanguage DTD.

14. (Previously Presented) The method according to claim 13, further comprising:

drawing implications from the assessed response to the structured query to become part of the memory of the apparatus, for aiding in automatically reading the structure and semantics ontology immanent in the source data.

15. (Previously Presented) The method according to claim 14, further comprising:

using the determined interlanguage DTD to build a destination dataset using the mechanisms of superordination including hyponymy, hyperonymy, co-hyperonymy, antonymy and series, and composition including meronymy, co-meronymy, consistency and collectivity.

16. (Currently Amended) The method according to claim 12, wherein part of the process of building a destination data is automated according to the inherent structures readable into the destination ontology or from any previous received assessments of ambiguous structures.

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17. (Currently Amended) A system-method for translating a first schema of data having one structure or semantics into a second schema of data having a second structure or semantics [[by ]]using a computer-implemented ontology deconstruction and reconstruction transfer mechanism which automatically creates an interlanguage document type definition (DTD) in which the interlanguage DTD automatically manages the structure and semantics of the structure and semantics of data to allow an automatic interlanguage definition of the first schema and translation into the second schema by the transfer mechanism, the system-method comprising:

~~a tag reader for automatically machine-reading tags automatically;~~

~~an interpreter for interpreting of data format which has been marked up by the tags and detecting its inherent structures or semantics;~~

~~a translator for automatically constructing an interlanguage DTD from the interpreted data format and detected structures or semantics; and~~

~~a transfer means for automatically transferring the data of first schema into the second schema via automatic definition of the first schema into the second schema using the interlanguage DTD;~~

wherein the transfer mechanism includes overarching superordination and composition mechanisms; and

wherein within the composition mechanism there are included submechanisms of meronymy, co-meronymy, consistency, and collectivity.

18-19. (Cancelled)

20. (Currently Amended) The system-method according to claim 17, wherein within the superordination mechanism, there are any one or more of the submechanisms of hyponymy, hyperonymy, co-hyperonymy, antonymy and series.

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21. (Cancelled)

22. (Currently Amended) The system method according to claim 17, wherein supplementary tag-by-tag or field-by-field queries are automatically generated according to any one or more of the filter mechanisms of:

taxonomic distance for automatically machine-reading whether the relationships of composition and superordination are too distant to be necessarily valid,

levels of delicacy for machine-reading whether an aggregated data element needs to be disaggregated and re-tagged,

potential semantic incursion for machine-reading identifiable sites of ambiguity, and

translation of silent into active tags or vice versa for machine-reading the level in the hierarchy of composition or superordination at which data needs to be entered to effect superordinate transformations.

23. (Currently Amended) A computer readable medium having a program encoded thereon adapted for use by a processor to data management method comprising:

translate translating a first schema of data having one structure or semantics into a second schema of data having a second structure or semantics by using a computer-implemented ontology deconstruction and reconstruction transfer mechanism which automatically creates an interlanguage document type definition (DTD) in which the interlanguage DTD automatically manages the structure and semantics of the structure and semantics of data to allow an automatic interlanguage definition of the first schema and translation into the second schema by the transfer mechanism; and

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~~utilize utilizing~~ a thesaurus and dictionary provided in combination with taxonomy definition in which the dictionary unpacks the meaning by means of paraphrase and exemplars and the thesaurus display wordings through which meanings can be aptly expressed;

wherein the dictionary is constructed using five semantic rules:  
minimized ambiguity;  
functional clarity;  
lowest common denominator semantics;  
a distinction of silent from active tag-concepts; and  
comprehensive internal cross-reference.

24. (Cancelled)

25. (Currently Amended) ~~The computer readable medium method according to claim 23, the program being further adapted to further comprising:~~  
~~map mapping~~ the thesaurus into the paradigm-constituting taxonomy for each schema in a related technology to thereby provide a basis of transfer of data to any other mapped schema in the related technology.

26. (Currently Amended) ~~The computer readable medium method according to claim 25, wherein for each schema of data the thesaurus lists its tags and includes definitions and examples from each schema of data, and a direct synonym is mapped against each tag, whose semantics are coextensive with, or narrower than, the tag against which the mapping occurs to provide a single equivalent for each mapped tag.~~

27. (Cancelled)

28. (Previously Presented ) A method for extending the range of useability of ontology driven systems and for creating interoperability between different mark-up schemas for the creation, location and formatting of digital content, the method comprising:

having a database or datafile of digital content in a Document Type Definition of the first digital mark-up or computer software ontology able to be outputted in a selected format allowed by the first digital mark-up or computer software ontology;

organizing digital mark-up or computer software tags of the first digital mark-up or computer software ontology into an overarching interlanguage ontology capable of absorbing and incorporating at least one other digital mark-up or computer software ontology;

automatically translating a Document Type Definition of the first digital mark-up or computer software ontology into a translated interlanguage Document Type Definition;

selecting the at least one other digital mark-up or computer software ontology;

automatically translating the translated interlanguage Document Type Definition into a Document Type Definition of the selected other digital mark-up or computer software ontology thereby allowing information in the database or datafile format to be output in the required selected format allowed by the selected other digital mark-up or computer software ontology;

wherein organizing digital mark-up or computer software tags of the first digital mark-up or computer software ontology into an overarching interlanguage ontology capable of absorbing and incorporating at least one other digital mark-up or computer software ontology includes applying the filter mechanisms of:

taxonomic distance for determining whether the relationships of composition and superordination are too distant to be necessarily valid,

levels of delicacy for determining whether an aggregated data element needs to be disaggregated and re-tagged,

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potential semantic incursion for determining identifiable sites of ambiguity, and translation of silent into active tags or vice versa for determining the level in the hierarchy of composition or superordination at which data needs to be entered to effect superordinate transformations.

29. (Previously Presented) The method according to claim 28, wherein organizing digital mark up or computer software tags of the first digital mark-up or computer software ontology into an overarching interlanguage ontology capable of absorbing and incorporating the selected other digital mark-up or computer software ontology further includes indexing according to the following rules:

providing a first level of granularity such that tags which represent data at a finer level of delicacy in the first ontology produce automatically recomposed data in the selected other ontology which manages the same data at a higher level of semantic aggregation;

providing a lowest common denominator semantics such that, when data has been data marked up with a pair of tags that can be interpreted to be closely synonymous but not identical, the narrower semantics of the two tags is operationalized;

providing contiguous domains wherein tags can be aggregated and aligned by virtue of the fact that they relate to semantically exclusive data; and

providing subset schemas within a tag such that a whole new domain identified within the first ontology or within a defined area thereof can be mapped within a single tag in the selected other ontology.

30. (Previously Presented) The method according to claim 29, further comprising returning a set of results from data based on heterogeneous schemas that have been mapped against the interlanguage Document Type Definition.